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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/709,629	05/18/2004	Kazumichi MACHIDA	040184	3628

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EXAMINER

CHAN, EMILY Y

ART UNIT PAPER NUMBER

2829

DATE MAILED: 05/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

OK

Office Action Summary	Application No. 10/709,629	Applicant(s) MACHIDA ET AL.	
	Examiner Emily Y. Chan	Art Unit 2829	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 March 2005.
 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) ☐ Claim(s) _____ is/are allowed.
 6) ☒ Claim(s) 1-8 is/are rejected.
 7) ☐ Claim(s) _____ is/are objected to.
 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
 10) ☒ The drawing(s) filed on 18 May 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☒ All b) ☐ Some * c) ☐ None of:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
 * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>12-15-04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

1. Claim 1 is objected to because of the following informalities: on line 3, "insrument" should be "instrument". Appropriate correction is required.

Claim Rejections - 35 USC § 102

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-3 and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by Kanamaru et al US Patent 6,496,023.

With respect to claims 1 and 8, Kanamaru et al ('023) disclose a probe sheet unit (see Figs 2 and 16a and 16B) being a sensing section of a Semiconductor wafer measuring instrument comprising ;

a base plate (see Col. 5, lines 54-55 "easily deformable both-ends support beam") mountable to a prober (probe forming board 4) of the instrument;

a sheet member (see Fig. 16A, "sheet material 29") with a flexibility (see Col. 12, lines 53-55) mounted to the base plate; and

plural measurement probes (6) provided on one surface of the sheet member (29) , wherein the plural measurement probes (6) are arranged on said surface of the sheet member and elastically deformable in vertical directions by respectively contacting with a plurality of electrodes (See fig.1, 3a) arranged on a surface of a measurement objective (wafer 2) (see Col. 12, lines 55-60) and said sheet member (29) in part or in whole is elastically deformable by a force (pressing jig 28) acting thereon

Art Unit: 2829

through the respective measurement probes (6) and thereby is capable of vertical displacement (see Fig. 16B).

With respect to claim 2, Kanamaru et al ('023) disclose wiring patterns formed inside and/or on a surface of the sheet member (29) and an external electrode connected electrically to the probes (6) through the wiring patterns provided on the surface of the sheet member (see Fig. 2).

With respect to claim 3, Kanamaru et al ('023) circuit elements are provided inside and/or on a surface of the sheet member (29) and the circuit elements are connected electrically to the wiring patterns (see Fig. 2, circuit element and wiring pattern connection).

Therefore, Kanamaru et al ('023) anticipate the claimed invention.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kanamaru et al ('023) in view of Takayama et al ('783).

Kanamaru et al ('023) do not disclose that his probe (6) is curved and a reinforcing member with an elasticity higher than the probe (6) is provided.

Takayama et al ('783) disclose a multiplayer probe (2) (see Fig. 1) and exclusively teach that the multiplayer probe (2) is curved (see Figs 2-5) and there is a reinforcing member (2b) with an elasticity higher than the multiplayer probe (2) is provided integrally with multiplayer the probe (2) on a surface thereof along the length direction (see Col. 3, lines 10-14 and Col. 6, lines 42-44).

It would have been obvious to one of ordinary skilled in the art at the time the claimed invention was made to incorporate the curved probes and the reinforcing member of Takayama et al ('783) into Kanamaru et al ('023) 's probe sheet device for the expected benefit of providing a highly reliable electrical testing as disclosed by Takayama et al ('783) (see Abstract, last line).

4. Claims 5 and 7 are is rejected under 35 U.S.C. 103(a) as being unpatentable over Kanamaru et al ('023) in view of Jitsumori et al US Patent No. 6,232,791.

Kanamaru et al ('023) do not disclose that his probe (6) is curved and a reinforcing member with an elasticity higher than the probe (6) is provided on the surface of the sheet member for claim 5 and also do not disclose an elastic member interposed between the base plate and the probe sheet member for claim 7.

Jitsumori et al ('791) disclose a probing apparatus (see Fig. 1b) and exclusively teach a probe (14) that is curved, a sheet member ("elastic sheet 13") and a reinforcing member ("elastic member 11") with an elasticity higher than the probe (14) for claim 5 and also disclose an elastic member (11) interposed between the base plate (10) and the probe sheet member (13) for claim 7 9see Col. 5, lines 38-39).

It would have been obvious to one of ordinary skilled in the art at the time the claimed invention was made to incorporate the curved probes and the reinforcing member of Jitsumori et al ('791) into Kanamaru et al ('023) 's probe sheet device for the expected benefit of providing more reliable electric connections between the probe terminals and the testing electrodes because Jitsumori et al ('791) disclose that the "elastic member accommodates variations in the distance between the board and each of the probe terminals" (see Col. 5, lines 42-44).

5. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kanamaru et al ('023) in view of Wada et al U S Publication No. 2004/0172556.

Kanamaru et al ('023) do not specify that their sheet member is made of material with a linear expansion coefficient in the range of from 2.5 to 10.5 ppm/C.

Wada et al ('556) disclose a probe sheet unit (see Fig. 27) comprising a base plate (19), a sheet member (29), a pusher and an elastomer (17). Wada et al ('556) exclusively teach that the sheet member (29) is made of softer material (see page 7, paragraph (0125)), which would inherently meets the claimed material with a linear expansion coefficient in the range of from 2.5 to 10.5 ppm/C.

It would have been obvious to one of ordinary skilled in the art at the time the claimed invention was made to incorporate the teaching of the sheet member made of softer material as taught by Wada et al ('556) into Kanamaru et al ('023)'s probe sheet device for the expected benefit of reducing damages caused in a test pad upon testing a semiconductor integrated circuit as disclosed by Wada et al ('556) (see page 1, paragraph (0013)).

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Howland US Publication No. 2003/0227292 discloses a deformable probe having different forms (see page 2, paragraph (0032)).

Response to Amendment

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Conclusion


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Emily Y. Chan whose telephone number is 571-272-1956. The examiner can normally be reached on 8:30-5:30.

Art Unit: 2829

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor Ramirez can be reached on 571-272-2034. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

EC
5-14-05


VINH NGUYEN
PRIMARY EXAMINER
A.U. 2829
05/16/05